

CLAIMS:

1. A microstrip coupler, comprising:

a first microstrip conductor configured to carry
an input signal;

5 a second microstrip conductor disposed along a
first side of the first microstrip conductor and configured to
couple at least a portion of the input signal;

a third microstrip conductor disposed along a
second side of the first microstrip conductor and configured to
10 couple at least a portion of the input signal;

a first controlled capacitance bridge connecting
the second microstrip conductor and the third microstrip
conductor, the controlled capacitance bridge comprising:

a conducting layer; and

15 a dielectric layer situated between the
conducting layer and the first microstrip conductor.

2. The apparatus of claim 1, further comprising a
second controlled capacitance bridge connecting the second
microstrip conductor and the third microstrip conductor.

20 3. The apparatus of claim 1, wherein the input
signal has even and odd modes and wherein the controlled

capacitance bridge is configured to compensate for a difference in velocity between the even and odd modes.

4. The apparatus of claim 1, wherein the conducting layer comprises a metallized layer disposed along a first side
5 of the dielectric layer, and wherein a capacitance is formed between the metallized layer and the first microstrip conductor.

5. The apparatus of claim 1, wherein the input signal has even and odd modes and wherein a width of a portion of the first microstrip conductor proximate the controlled
10 capacitance bridge is configured to compensate for a difference in velocity between the even and odd modes.

6. An controlled capacitance bridge for connecting a first microstrip conductor and a second microstrip conductor of a microstrip coupler, wherein the first microstrip conductor is
15 disposed along a first side of a third microstrip conductor configured to carry an input signal and the second microstrip conductor is disposed along a second side of the third microstrip conductor, the controlled capacitance bridge comprising:

20 a conducting layer; and
 a dielectric layer situated between the conducting layer and the third microstrip coupler.

7. The apparatus of claim 6, wherein the input signal has even and odd modes and wherein the controlled capacitance bridge is configured to compensate for a difference in velocity between the even and odd modes.

5 8. The apparatus of claim 6, wherein the conducting layer comprises a metallized layer disposed along a first side of the dielectric layer, and wherein a capacitance is formed between the metallized layer and the first microstrip conductor.

10 9. The apparatus of claim 7, wherein a width of the conducting layer is selected to compensate for the difference in velocity between the even and odd modes.

10. The apparatus of claim 7, wherein a thickness of the dielectric layer is selected to compensate for the difference in velocity between the even and odd modes.

15 11. A microstrip coupler, comprising:

an input microstrip conductor configured to carry an input signal;

a central microstrip conductor proximate the input microstrip conductor and separated from the input microstrip conductor by a first gap;

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an output microstrip conductor proximate the central microstrip conductor and separated from the central microstrip conductor by a second gap;

a coupling microstrip conductor for coupling at
5 least a portion of the input signal;

12. a first controlled capacitance bridge for connecting the input microstrip conductor and the central microstrip conductor, the first controlled capacitance bridge comprising:

10 a first conducting layer; and

a first dielectric situated between the first conducting layer and the first gap; and

a second controlled capacitance bridge for connecting the central microstrip conductor and the output
15 microstrip conductor, the second controlled capacitance bridge comprising:

a second conducting layer; and

a second dielectric situated between the second conducting layer and the second gap.

20 13. The microstrip coupler of claim 11, wherein the coupling microstrip conductor comprises:

a first coupled portion disposed along a first side of the central microstrip conductor;

a second coupled portion disposed along a second side of the central microstrip conductor;

a first connecting portion extending through the first gap and beneath the first controlled capacitance bridge
5 for connecting a first end of the first coupled portion and a first end of the second coupled portion; and

a second connecting portion extending through the second gap and beneath the second controlled capacitance bridge for connecting a second end of the first coupled portion and a
10 second end of the second coupled portion.